

# Understanding the problem - The Overlap Between Hazard Mitigation and Adaptation




Photo source: Keystone USA-ZUMA/Rex Features

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National Adaptation Forum  
April 2, 2013

# NHMA was founded in 2008 to bring together the various individuals and organizations working in the field of hazard mitigation.



Natural Hazard Mitigation Association

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What is the NHMA?

The Natural Hazard Mitigation Association (NHMA) was founded in 2008 to bring together individuals and organizations working in the field of hazard mitigation. The Natural Hazards Mitigation Association (NHMA) is a 501(c)3 organization of professionals involved in natural hazard mitigation. NHMA serves as a respected voice in hazard mitigation policy both in the United States and



**Through sharing approaches and tools, we can work together to build a safer, sustainable society.**

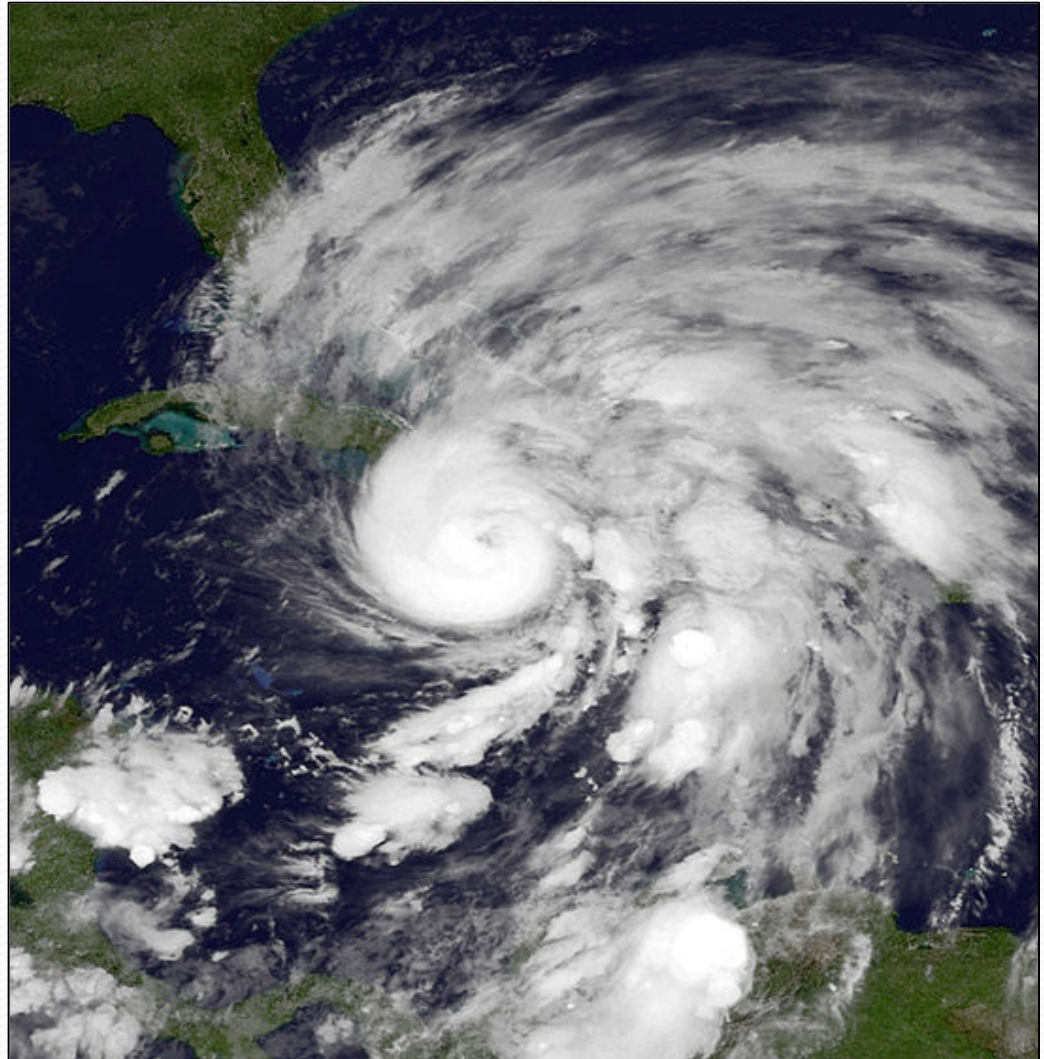


**We face risks everyday.**

**Alone we cannot protect ourselves.**

We already have  
trouble dealing with  
current hazards.

Projected climate  
change impacts will  
further tap our skills  
and tax our available  
resources.



Superstorm Sandy. Source: NOAA.

Two groups with a lot in common are hazard mitigation and adaptation professionals.

$$\text{Risk} = \text{Hazard} \times \text{Exposure} \times \text{Vulnerability}$$

**Hazard Mitigation** reduces exposure and vulnerability, and is informed by past events.

**Adaptation** reduces exposure and vulnerability, and is informed by future projections.

NHMA works to foster collaboration between hazard mitigation and adaptation communities of practice.



# Today's session will discuss connections between hazard mitigation and adaptation.

- Speakers will discuss:
  - What is hazard mitigation?
  - Understanding and Communicating Risk: A Reinsurance Perspective
  - Lessons from state and local planning and response
  - Development of new climate information for use by hazard mitigation professionals
- The subsequent discussion will discuss tangible ways to build new and strengthen existing connections

# What is Hazard Mitigation?



Kelly Klima, Ph.D.



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# What is Hazard Mitigation?

Hazard: A natural, manmade, or technological problem



Mitigation: To reduce, relieve, or alleviate

Hazard Mitigation is any cost-effective action taken to eliminate or reduce the long-term risk to life and property from natural and technological hazards.  
~ Federal Emergency Management Agency (FEMA)



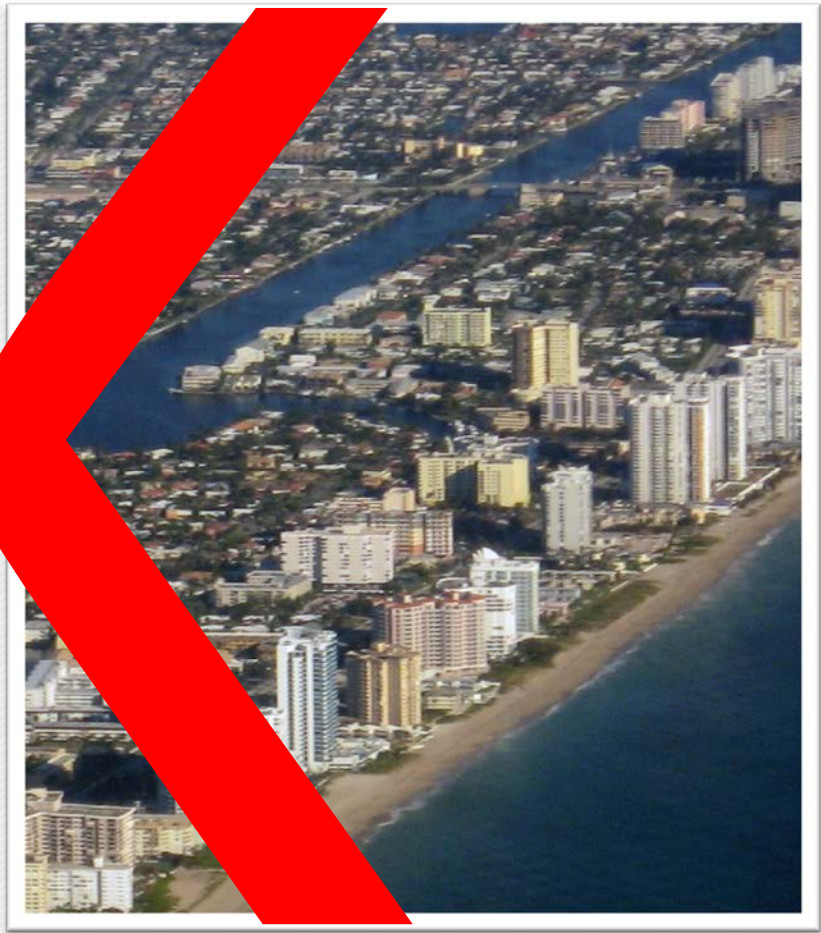
# Successful hazard mitigation breaks the cycle of destruction, rebuilding, and destruction again.

Miami Beach 1926



Source: Wendler Collection

Miami Beach 2006



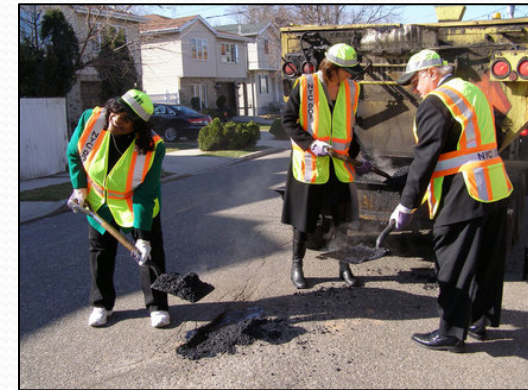
Source: Joel Gratz © 2006

# Hazard mitigation addresses short and long term.

Comprehensive emergency planning, preparedness, and recovery.



Maintenance, public safety measures



Retrofits, enforcement of building codes

Land use planning, coastal zone management



# Hazard mitigation benefits stakeholders in multiple ways.

- Reduces the loss of life, property, essential services, critical facilities and economic hardship.
- Reduces short-term and long-term recovery and reconstruction costs.
- Increases cooperation and communication within the community through the planning process.
- Increases potential for state and federal funding for recovery and reconstruction projects.



# There are four essential steps to hazard mitigation.

1. Hazard identification
2. Vulnerability analysis
3. Defining a hazard mitigation strategy/ plan
4. Implementation of hazard mitigation activities and projects to alter, avert, adapt or avoid the potential hazard.

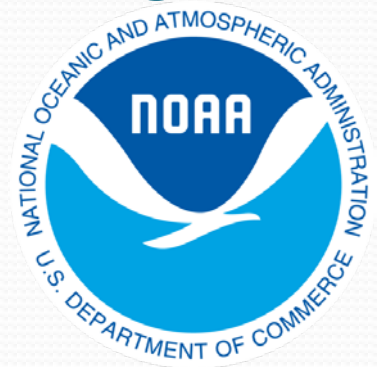
# Who can practice hazard mitigation? Everyone!



You can be part of the  
solution!



Here are a few folks working on hazard mitigation.



**American Planning Association**

**FEMA**



**US Army Corps  
of Engineers®**

**AECOM**



**Dewberry®**



**AMERICAN BAR ASSOCIATION**  
**Defending Liberty  
Pursuing Justice**





## Summary:

### Hazard mitigation is plain common sense.

"Disaster risk reduction is not a luxury. It's an essential insurance policy for a more disaster-prone world, and one of the smartest, most cost-effective investments we can make in our common future. The benefits of this investment will be calculated not only in dollars saved, but most importantly, in saved lives."



~ Jan Egeland, Former U.N. Under-Secretary General for Humanitarian Affairs and Emergency Relief Coordinator

**Hazard mitigation plans using only past events; as safe as driving 80mph using rear view mirrors only!**



Adaptation will require us to look forward, too.

# NHMA's Resilient Neighbors Network helps communities become disaster resilient.



**Supported by:**

**FEMA**

**Blue-Ribbon  
Advisory Team.**



# There are 10 Resilient Neighbors Network pilot communities:

Augusta, GA

Central Shenandoah Valley, VA

Charlotte-Mecklenberg, NC

Grays Harbor County, WA

Hillsborough County, FL

Jefferson County, WV

Pasadena, TX

Rockford, IL

Tulsa, OK

Vermont



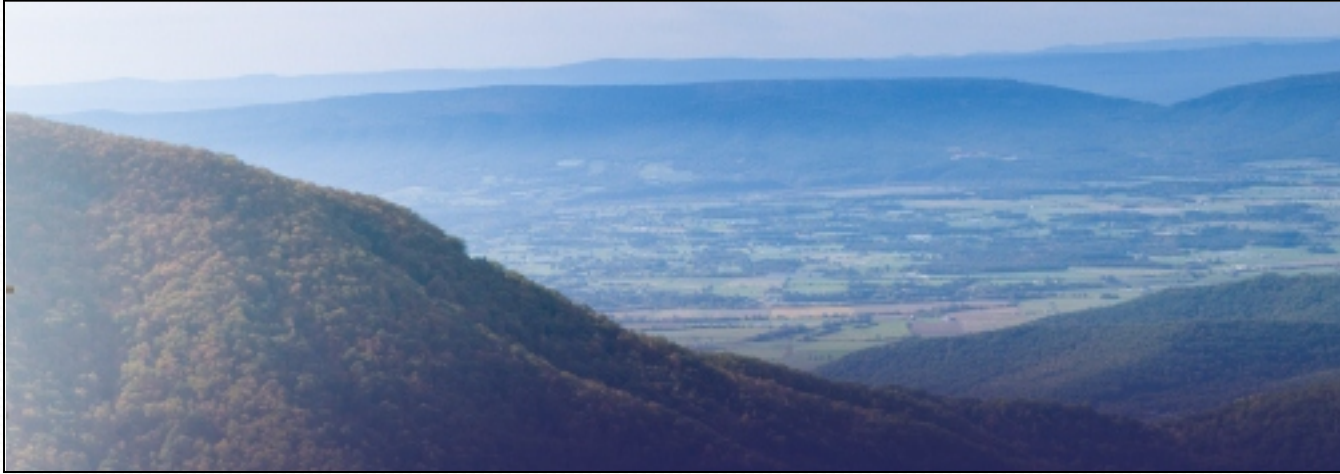
# Augusta, Georgia

- Inland city
- Floods, tornadoes, urban sprawl
- Planning, preparedness & prevention
- Citizen and stakeholder engagement
- Updating 5-year hazard mitigation plan
- Supporting safer, stronger, & more resilient buildings
- Conducting acquisition, relocation & retrofitting within the floodplain
- Protecting natural resources



*“Resilience demands that the whole community works together.”*

# Central Shenandoah Valley, Virginia



*“We all help each other, because everyone in this region has to be in it together to remain resilient.”*

- Includes 5 counties, 5 cities, 11 towns.
- Mountains and rivers run through the community
- Main threats are floods, tropical systems, winter storms, & tornadoes.
- Emphasis on regional and local plans for all hazards, including wildfire.
- Flood mitigation includes acquisition.
- Citizen action and partnerships include CERT and special programs for vulnerable people.
- Focus on collaborative planning and building relationships.



# Charlotte-Mecklenberg, North Carolina



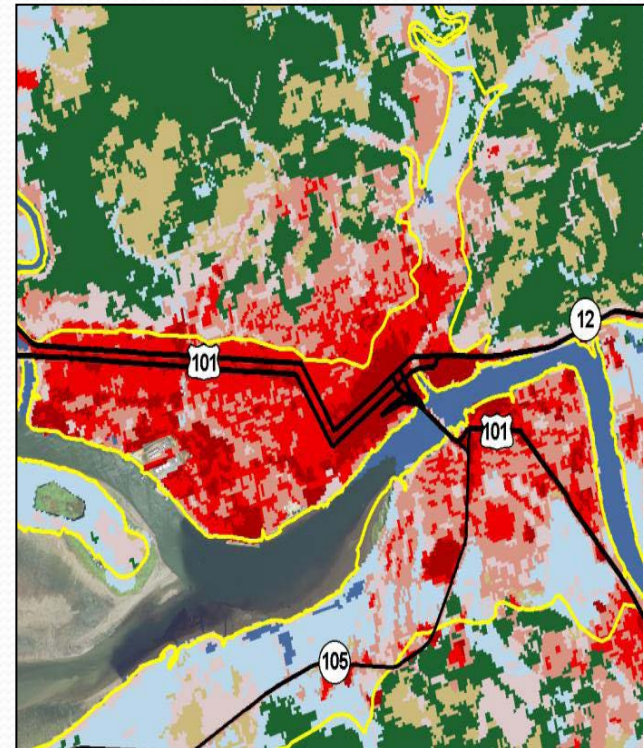
*“Continuing to use FEMA’s existing conditions flood insurance maps to regulate new construction would only continue the cycle of flooding and rebuild for generations to come... Gaining support from local elected officials and community partners like Realtors and developers was essential to change course and create a more sustainable future.”*

- Major city with consolidated city-county government.
- Combines protection of lives & property with restoration of natural functions of floodplains.
- Uses higher regulatory standards based on future floodplain maps.
- Voluntary purchase of 250 high-risk floodplain buildings. Uses “quick-buy” system.
- Prototype flood warning system.
- Aggressive, invaluable partnership network includes Realtors and developers.
- Community Risk Assessment and Risk Reduction Plan uses advanced flood models and customized Risk MAP data sets, along with local data, to evaluate risk and make mitigation decisions

# Grays Harbor County, Washington

- On the Pacific rim, south of Seattle.
- 9 cities, 2 tribes, islands, mountains & rivers.
- Flood, earthquake, tsunami, severe storms, volcano.
- Working to draw together fragmented communities.
- Focused on preparedness and planning.
- A tsunami can strike with 20-min. warning and flood far inland, stranding people who have no time to reach high ground.
- Creating a prototype “vertical evacuation” tsunami building to hold 700 students and faculty, plus 500 community members.

*“Preparing for disaster is a continual process...  
We’re making progress.”*



# Hillsborough County, Florida

- Includes major city, Tampa, on west coast of Florida.
- Hazards include hurricanes, floods, severe storms.
- Encourages hazard mitigation, including elevation of homes in safe sites, planning, and public education.
- Encourages homeowner action.
- Hurricane storm surge could extend 3 miles inland, 13-17 feet deep.
- Landmark plan focuses on how to recover.
- Identifies priority redevelopment areas where rebuilding will be encouraged and incentivized.



*“Our plan identifies how our community will redevelop and recover. It emphasizes seizing opportunities for building back better and improving our community.”*



# Jefferson County, WV



*“Our strength lies in our relationships (and) involving the whole community.”*

- Appalachian county with rich heritage that dates back to founding of our nation.
- Just outside Washington, DC.
- Hazards include flooding, wildfires, winter storms, droughts, and terrorism. Recent “derecho” windstorm.
- Exemplary partnership process that involves hundreds of businesses, agencies, vulnerable populations, and citizens in continual planning, drills, and implementation.
- Disaster-Ready Kids, StormReady, hazard mitigation planning, and COOP programs.

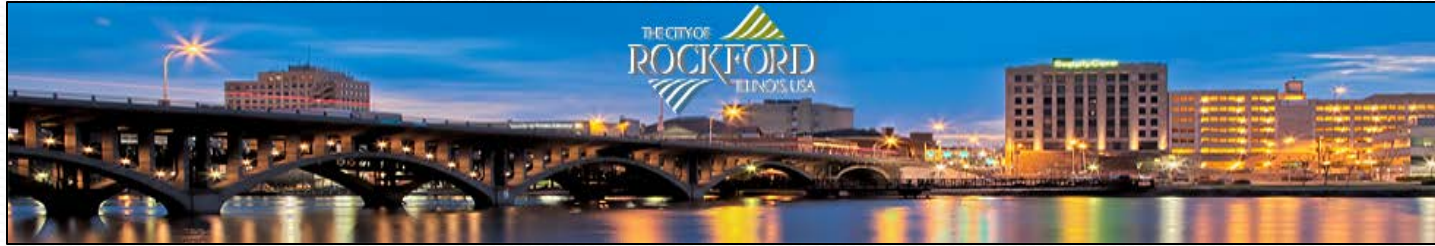
# Pasadena, TX



*“All communications are bilingual. This is so important, so that everyone understand what is happening.”*

- Low-lying town near Gulf, south of Houston.
- Hurricanes, tropical storms, inland flooding, storm surge.
- Recovering from heavy 2008 damage in Hurricane Ike.
- Created prototype Program for Public Information to engage citizenry.
- Outreach includes bilingual and vulnerable populations.
- Partnership model and targeted outreach.
- Programs include hazard mitigation, environmental protection, infrastructure and land use management.

# Rockford, Illinois



- Small city in Northern Illinois.
- With 2 counties, developing a major regional plan for sustainable development.
- Very broad work program includes hazard mitigation and environmental protection.
- Walkable streetscapes and parks, alternate energy, greenhouse gas issues, energy conservation, and disaster resilience.
- Acquiring floodplain properties to create parks.

*“Our growth strategy enhances neighborhood livability, balances new development with infill, promotes agriculture, reduces greenhouse gas emissions, introduces walkable landscapes, conserves natural resources, and rejuvenates historic economic centers.”*



# Tulsa, Oklahoma



*“We do everything through partnerships -- linking together government, businesses, Nonprofits, and grassroots citizens.”*

- Inland community of 400,000.
- Long history of flooding problems, with severe storms, tornadoes, and chemical hazards.
- Made dramatic strides in reducing frequency of floods since 1984 & 1986 disasters.
- Comprehensive management program includes aggressive regulation, floodplain clearance, watershed management, all-hazards planning & environmental protection.
- Cleared 1,000+ floodplain buildings.
- Emphasizes collaboration and partnerships, spurred by Project Impact (1998-2001) and the nonprofit Tulsa Partners, Inc.

# Vermont



*“We’re building partnerships and integrating river science and river protection into ... a unified approach to floodplain management, hazard mitigation, water quality protection, and community development.”*

- The Green Mountain state.
- Many mountain streams with high velocities.
- Frequent flash floods, serious streambank erosion.
- Three big storms devastated half the state in 2011.
- Still recovering from Irene.
- Working to build back better.
- Encouraging communities in recovery and hazard mitigation and planning – Flood-Resilient Communities Program.
- Encouraging smart growth, walkable communities, sound regulation.

# Contact Information

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